Synopsis on

"An analytical study of Turmeric Producing Farmers With special reference to Nanded District"

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INDEX

Sr. No.	Contents	Page No.
01	Introduction	03
02	Importance & Significance of the Study	04
03	Profile of the Turmeric Cultivated Farmers Details of the Turmeric Crop About Crop of Turmeric	06
04	Objectives and Hypothesis of the Study	11
05	Research Methodology	12
06	Expected Contribution	14
07	Scope and Limitations of the Study	15
08	Chapters Scheme	15
09	Bibliography	16

"An Analytical Study of Turmeric Producing Farmers

With Special Reference to Nanded District"

Introduction:

Turmeric is a sacred and ancient spice of India knows as 'Indian saffron'. Turmeric is an important commercial spice crop grown in India. Turmeric production in India is about 78% of total production in the world. Turmeric is used in Indian spices, India culinary as curry powder. It is used in diversified forms as a flavoring, condiment, and coloring agent as a curry powder in Indian spices. The most important know of turmeric that it is known as Indian *keshar* (Curcuma longa) an important commercial spice crops grown in India. The turmeric is using as anti-cancer and anti-viral activities and hence finds use in the drug industry and cosmetic industry as well as *'Kum-kum',* popular with every house wife, is also a by-product of turmeric. The turmeric is finding in various religious and ceremonial occasions in Indian culture. The turmeric is an ideal product in Indian.

Turmeric is the dried rhizome of Curcuma longa, is belonging from the zingiberaceae family originally from south Asia particularly in India. The plant is propagated from rhizomes. The leaves are long, broad, lance late and bright green. The flowers are pale yellow and borne on dense spikes. The pseudo stems are shorter than leaves. The rhizomes are ready for harvesting in about 7 to 9 months after planting.

Turmeric is a part of Curcuma Long botanic group and it is a perennial herbaceous plant of the ginger family (Zingiberaceae). It is used as a seasoning, dye, drug with diverse applications and also used in cosmetics industry. It is used in various religious ceremonies. India is a major producer and exporter of turmeric in the world. The important states which cultivate turmeric are Andhra Pradesh, Tamil Nadu, Orissa, Karnataka, West Bengal, Gujarat, Meghalaya, Maharashtra and Assam, Andhra Pradesh solely occupies 35.0% of area and 47.0% of Turmeric production. In India, Turmeric cultivation is done in two seasons i.e., February-May and August-October.

Turmeric, known as *halad* in Marathi as well as *haldi* in Hindi, is nicknamed as 'Indian Solid Gold' and 'Indian Saffron' to its golden yellow color.[1]

Importance and Significance of the Study:

Turmeric is an important part of human life in day-to-day routine. Turmeric has a very important as an economically, religiously, medicinally. India produces 80% of the world's turmeric. Turmeric is widely used in daily diets, medicines, cosmetics, and biological pesticides as well as used in various *Ayurvedic* products. Turmeric also has a unique significance.

The most complicated part of turmeric cultivation is harvesting and processing of turmeric. As a result, despite the good price of turmeric, farmers are reluctant to cultivate this crop. However, due to mechanization in turmeric crop, the area under turmeric is increasing in Maharashtra.

Turmeric is herbal medicinal plant and it is basically from India. Turmeric is known as *curcumalonga* and it is from ginger family. It is also called as Indian saffron. In ancient time it was used for medicinal uses in *ayurveda*. Estimated

production of turmeric in India is in year 2022 is 4.89 lakh MT and in the year 2021 its production was 4.46 lakh metric tons. Turmeric prices in year 2022 are predicted as Rs.6400-6700 per quintal.

Nowadays, farmers are using a modern technology for farming of turmeric production. Farmer from Gujrat state had use one of the technologies of Israel for producing turmeric and it was cultivated in greenhouse. This farmer from *Rupal kampa* village of Gujrat well known for Horticulture and by using of farming technology; they increased the production of turmeric by four times.

Also, one of the farmers from Gujrat is invested 10 crores in greenhouse for cultivation of turmeric. It is high tech vertical farming. In this kind farming farmers will produce 500-800 tons per acre. It means they will earn income of 3 crore to 3.5 crore in one acre land. In this farming technique famers, also reduces to spend money on labour, fertilizers and water.

India is the country of major producing and exporter of turmeric in the world. The remaining and other producing countries are Thailand, other Southeast Asian countries, Taiwan and Central and Latin America. The worldwide turmeric production is near bout 11lakhtonesperannum. The ratio of the percent of the producing countries around the world is Nigeria and Bangladesh together contributing to (6%), Myanmar (4%), China (8%), and an India is contributing 78 % of the worldwide production.

India is largest exporter of Turmeric among all over world. After India some other major exporters of turmeric are Thailand, other Southeast Asian countries, Central and Latin America and Taiwan. UAE is one of the major importers of turmeric from India which is 18% of total exports followed by USA with 8%.

Beside these, some other leading exporters are Bangladesh, Japan, Sri Lanka, United Kingdom, Malaysia, South Africa, Netherland and Saudi Arabia. Over all 75% of total imports are acquired by all these countries. From all over the world Asian countries are main supplier to entire world. Remaining 25% portion is acquired by Europe, North America and Central and Latin American countries. USA imports 97%turmeric from India and remaining portion from the Islands of the Pacific and Thailand. From total global production imports of UAE are 18%, followed by USA 11%, Japan 9%,Sri Lanka, UK, Malaysia together accounting for17%.

India is largest turmeric producer as it produces near about 80% of the world's production. The state of Maharashtra is second largest turmeric producer state in India after Telangana state. After the Hingoli District, the Nanded district is second largest turmeric producing district in Marathwada Region of Maharashtra State. It is also most important that the, Nanded district is on fourth place in producing turmeric in Maharashtra state.

Turmeric is most producing medicinal and herbal plant which is used in various kinds of medicine, Ayurveda, Cosmetic products, as spices in food in curry and other food preparation.

Profile of the Turmeric Cultivated Farmers in Nanded Districts.

Nanded District mainly consists of plain areas with small hills and granite boulders. The land is mainly utilized for agricultural purpose. The Agricultural area is 10, 33,114 hectares and the forest area is 91,748 hectares. There are ten small rivers with Godavari, Manjra, Manyad, and Penganga being the main rivers.

Nanded is one of the historical places in Marathwada region of Maharashtra State. It is situated on the north bank of Godavari River. It is famous for Sachkhand Gurudwaras. Nanded is a town of great antiquity. It is said that during the Puranic days, *Pandavas* travelled through Nanded district. *Nandas* ruled over Nanded through generations.

The mention of Nanded is found in the Lila Chaitra, a treatise written by Mahim Bhatta. It gives the description of the idol of Narasimha in the town. Nanded was formerly known as *"Nanda tat" (Nanda Border)* which is confirmed by the copper plate found at *Vasim*. It is also called as *Nandigram Nagri*. The city is also known as a Center of Sanskrit learning. Most of the population in the area depends on agriculture; sorghum (Jowar) and rice are the major food crops.

The details about the Turmeric Crop:

The Turmeric has scientifically known as Curcuma longa, as well as botanical name is also Curcuma longa herbaceous plant. It is used as an important condiment and as a dye with varied applications in drug and cosmetic industries. It contains a chemical called curcumin and other chemicals which is used for decrease swelling, it is often used to treat conditions that involve pain and inflammation. People commonly use turmeric for osteoarthritis. It is also used for hay fever, depression, high cholesterol, a type of liver disease, and itching.[3]The turmeric belonging to the root of zingiberaceae family likely to the ginger. It is the root of the plant is using for purpose of various sectors. The plant is growing from the rhizome and the leaves of the plants are long, broad and green yellow colour. The root and flowers are pale yellow.[2]

Turmeric has bitter taste and warm in nature. Turmeric has many types such as, CO1, BSR.1, Suguna, Suvarna, Sudharshana, Krishna, Sugundham, Roma, Suroma, Rajendra Sonia, Ranga, Rasmi. In which areas rainfall is come in April-May before monsoon they can plant Turmeric crop earliest periods. Although turmeric is shade friendly crop so castor or Sesbania grandiflora can be grown on border lines. On the farming land small pits are made with spacing of 25*30cm using hand hoe and that is covered with soil or dry powdered cattle manure. Spacing between plants is 25 cm and between water shade and furrows is 45-60 cm. for one hector 2500kg of rhizomes seeds are required. Well-developed healthy and disease free whole or split mother rhizomes weighing 35-44g are used for planting. Rhizomes are treated with 0.3% Dithane M-45 and 0.5% Malathion for 30 minutes before storing.[4]Turmeric has rhizomes are used fresh or boiled in water and dried, after which they are ground into a deep orange-yellow powder commonly used as a coloring and flavoring agent.

About crop of turmeric:

Requirement

Climate

Turmeric can be grown from sea level to 1500m in the hills, at a temperature range of 20-30^{0}C with a rainfall of 1500-2250 mm per annum. It is also grown as an irrigated Crop. It thrives best in a well drained sandy or clayey loam rich in humus content. It can be grown on different soil viz. light black, ashy loam and red soils to clay loams.

Varieties

CO1, BSR.1, Suguna, Suvarna, Sudharshana, Krishna, Sugundham, Roma, Suroma, Rajendra Sonia, Ranga, Rasmi.

Material and planting

The areas where the rainfall is sufficiently early, crop can be planted during April-May with the receipt of pre-monsoon showers. Since turmeric is a shade loving plant, castor or *Sesbania grandiflora* may be raised along the border lines in the field. Well developed healthy and disease free whole or split mother rhizomes weighing 35-44g are used for planting. Rhizomes are treated with 0.3% Dithane M-45 and 0.5% Malathion for 30 minutes before storing. Small pits are made with a hand hoe in the beds in rows with a spacing of 25x 30 cm and covered with soil or dry powdered cattle manure. The optimum spacing in furrows and ridges is about 45-60 cm between the rows and 25 cm between the plants. Seed rates of 2500kg of rhizomes are required for one hectare.

Fertilizers

Farm yard manure @10 t/ha is applied as basal dressing. Beds are earthed up each time after top dressing. The NPK recommendation is 125:37:37kg per ha. Whole Phosphorus (P) and Potash (K_2O) is given as basal dose at the time planting while Nitrogen (N) is applied as 25kg each at basal, 30,60,90 and 120 days after planting i.e., 125kg N.

Intercultural Operations

Mulching and weeding:

The crop is to be mulched immediately after planting with green leaves or banana pseudo stem or sugarcane trash at the rate of 12-15 tonnes per hectare. It may be repeated for second time after 50 days with the same quantity of green leaves after

weeding and application of fertilizers. Weeding may be done thrice at 60,120 and 150 days after planting depending upon weed intensity.

Irrigation

Depending on the soil types, irrigated crops require 15-20 irrigations in heavy soils and 35-40 in light soils. Moisture stress affects the growth and development of the plant especially during the rhizome bulking stage.

Plant protection

Pest

Shoot borer (*Conogethes punctiferalis*) The presence of bore hole on the pseudostems through which the grass is extruded and the withered central shoot are the symptoms of pest infestation.

Control

Spray Malathion 0.1% at monthly interval from July to October.

Harvesting

Depending upon the variety, the crop becomes ready for harvest in seven to nine months. The land is ploughed and the rhizomes are gathered by hand picking or the clumps are carefully lifted with a spade. Harvested rhizomes are cleaned of mud and other extraneous matter adhering to them. The average yield per hectare is 20-25 tonnes of green turmeric.

Processing

Curing

Fresh turmeric is cured before marketing. Curing involves boiling of fresh rhizomes in water and drying in the sun. The mother rhizomes and the fingers are generally cured separately in the traditional method; the cleaned rhizomes are boiled in copper or galvanized iron or earthen vessels, with water just enough to soak them. Boiling is

stopped when froth comes out and white fumes appear giving out a typical odour. The cooking of turmeric is to be done within two to three days after harvesting. The cooked fingers are dried in the sun by spreading 5-7 cm thick layers on bamboo mat or drying floor. During night time, the materials should be heaped or covered. Drying is completed in 10-15 days.

Polishing

The appearance is improved by smoothening and polishing outer surface by manual or mechanical rubbing. The improved method is by using hand operated barrel or drum mounted on a central axis, the sides of which are made of expanded metal mesh.[11]

Objectives of the Study:

1. To study and estimate the financial cost and returns of the of the farmer of turmeric production
2. To study to raise the additional income through turmeric production
3. To study the financial impact of environment on turmeric producers (farmers)
4. To know the standard of living of turmeric producing famers.
5. To Study how to reduce production cost of turmeric production.

HYPOTHESIS OF THE STUDY

Hypothesis 1:

H_0There is no significance balance on financial cost and returns of the farmer of turmeric production.

H_1There is significance balance on financial cost and returns of the of the farmer of turmeric production

Hypothesis 2:

H_0 There is significant impact on raise of additional income through turmeric production by way of traditional farming.

H_1 There is no significant impact on raise of additional income through adopting the recent technique.

Hypothesis 3:

H_0 There is significance impact of financial conditions of the farmers due to the environment.

H_1 There is no significance impact of financial conditions of the farmers due to the environment.

Hypothesis 4:

H_0There is huge impact on the standard of living of the farmers through the turmeric farming.

H_1There is no any impact on the standard of living of the farmers through the turmeric farming.

Hypothesis 5:

H_0There is successfully reduction in production cost due to cost reduction techniques of turmeric production.

H_1There is no possibility to reduction in production cost due to cost reduction techniques of turmeric production.

Research is "Systematized Effort to Gain New Knowledge"

Research as a means for gaining knowledge can be carried out either arbitrarily or in a systematic fashion. It is a purposive investigation.

There are mainly two types of data used in any research.

1. Primary data.

2. Secondary data

Primary Data:

Data that is collected for the specific purpose at hand is called as Primary Data. Researcher has collected the primary data through the personnel, interviews and the group interviews by asking the questions to the farmers, authorities of market committee, and selected business.

Methods used for collecting Primary Data are as follows:

1. The Questionnaire

2. Interviewing

3. Group Interview.

Secondary Data:

The data has been collected for the purpose of the study. Secondary sources of data provide a wealth of information to the researcher.

The other sources for collecting Secondary Data are as follows:

1. Books

2. Magazines.

3. Journal

4. Reports.

5. Records,

6. Google, Websites etc.

To carry out the present project, the researcher is going to use primary as well as secondary data through the questionnaire. The questions are preparing to collect the relevant information from the 400 farmers. Through the questionnaire, direct interview method.

The sample size: sample size of the farmers is (4 Talukas* 100 Farmers) 400.

Various stages involved in the Research Process:

1. Exploration of the Situation
2. Developing the Research Design
3. Data Collection
4. Data Analysis and Interpretation of results.

Expected Contribution:

- The study of the project will help the farmers as well as researchers management to know the current system of cultivating the turmeric crop.
- The study will enable the farmers to bring about more profitability in the process cultivation.
- The study will also help the farmers to facing the situation of conflict, natural calamities etc. effectively.

- The study will help the farmers to select the right seeds for right types of farming of land with more accurate and easiest way.
- The Study will help the vast difference between taking theoretical knowledge and practical knowledge of the farmers.
- The study will help the growth of the performance of the crops through the effective management.
- The study will help that the market committee authorities as well as related offices should find out the reasons behind the cost and yields.
- The study will help the satisfaction of farmers as well as stakeholders etc.

Scope and Limitations of the Study:

By taking into consideration scope of the subject is wider following limitations are applied:

1. Out of total number of Turmeric Producers from Nanded District the selected 400 farmers were selected for research work.
2. This was squeezed with Turmeric Production.
3. In Nanded district many farmers not registered and even not any records of some small farmers as they use turmeric for their own consumption.
4. This research work is constricted various *Taluka's (Tahasils)* of the Nanded District.

The scope of research study, in fact an exploratory investigation the status of turmeric production and returns in Nanded district located in Marathwada region of Maharashtra State.

Chapters Scheme:

1. Chapter 01: Introduction.
2. Chapter 02: Research Methodology and Review of Literature
3. Chapter 03: About the crop Turmeric and the Profile of the farmers.
4. Chapter 04: Data Analysis.
5. Chapter 05: Findings, Conclusion and suggestions.

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